

Enabling Fleet Management Solution for Remote Truck Health Monitoring for a Leading American Truck Manufacturer



Overview

Vehicle manufacturers are offering data-as-a-service to the fleet operators as they are looking for accessing their vehicle data that will directly impact their business decision. For the vehicle manufacturers this is a subscription-based SaaS revenue model. The platform uses technologies to ingest, secure, cleanse, normalize, aggregate, and enrich data from fleet customers' vehicles and implement use cases like business analytics, machine learning, and anomaly detection. Moreover, vehicle manufacturers are also offering different data packages to suit the specific needs of the fleet operators under different subscription plans.

Client Background and Challenge

The customer is an American Fortune 500 company, also one of the world's largest producers of medium and heavy-duty trucks, as well as a major manufacturer of light and medium duty vehicles through several subsidiaries. The customer supplies its products and services to clients around the world via a vast network of dealers in more than 2000 locations. In addition, the company has international distribution in more than 100 countries.

The customer was facing challenges in addressing the requirements of the fleet operators. Some of them are listed below.



Lack of proper API access to fleet partners with customer's remote diagnostics vehicle data.



Non-availability of fleet management dashboards to monitor the health of fleet operator's trucks to manage vehicle maintenance and repairs in a timely manner.

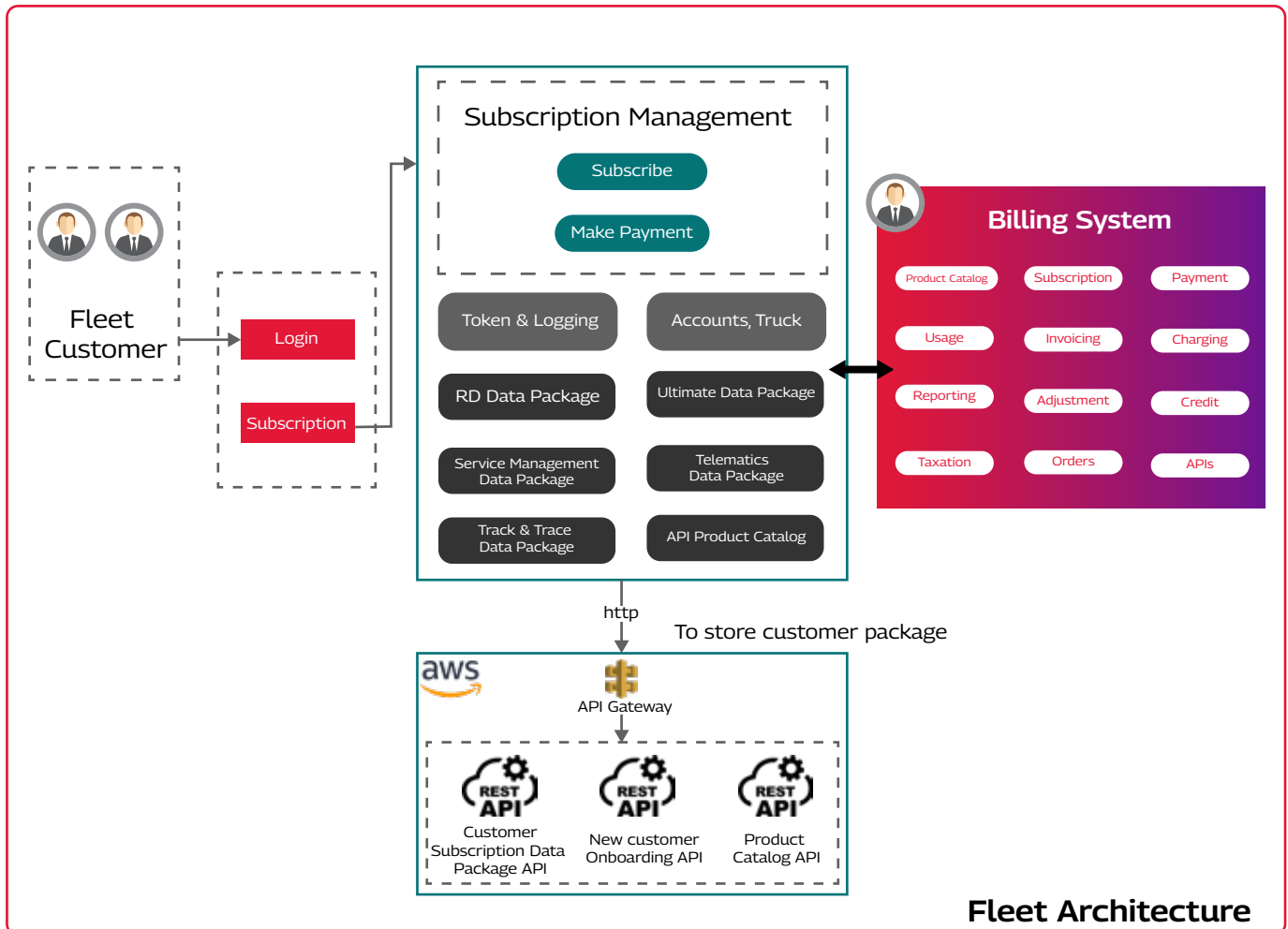


Real-time data and functional support with a proper DevOps-IT support service to avoid any delay and unplanned downtime during critical vehicle trip schedule.

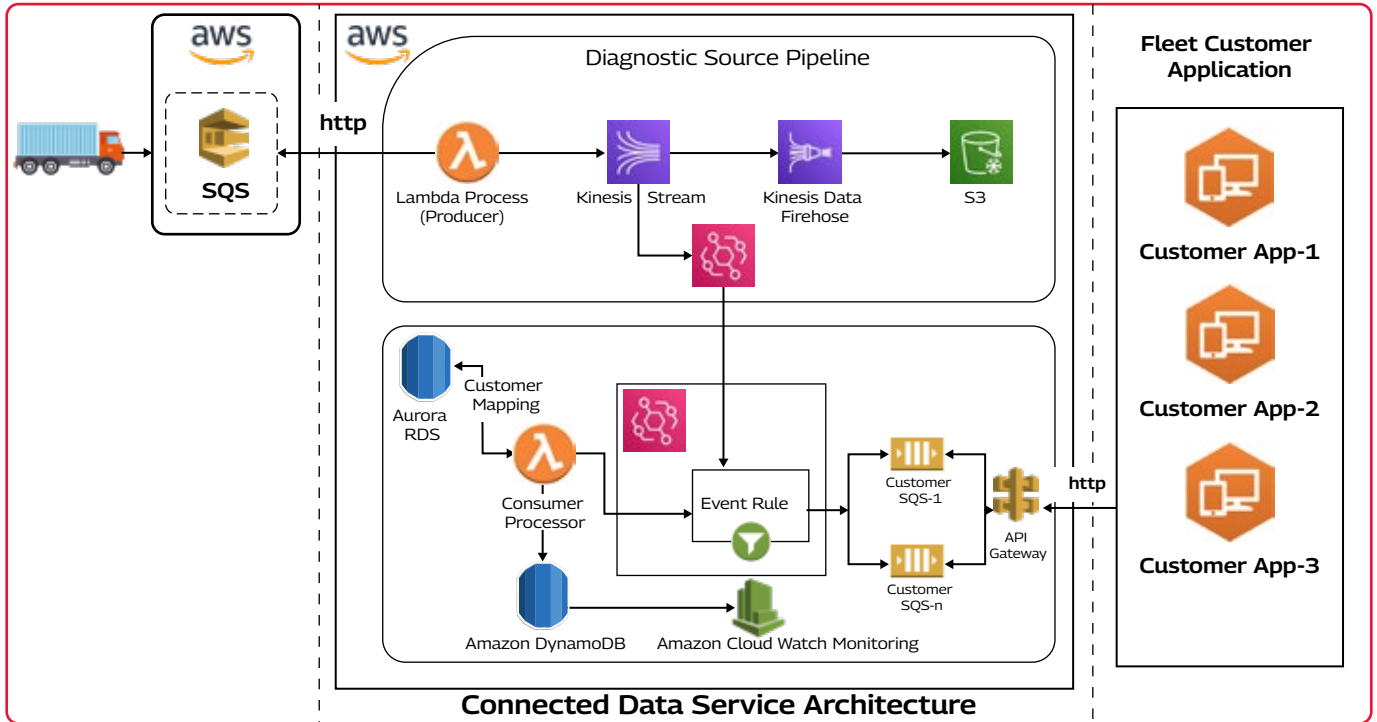
Our Approach and Solution

Our fleet management solution has been designed and implemented to accept the events streams from vehicles and make them available to the corresponding fleet partners in a quick turn-around of time. The event data stream and platform API's will enable fleet operators with appropriate data packages from relevant vehicles to build their own fleet management dashboards to manage fleet health, maintenance, and repairs.

- Enabling key data packages (remote diagnostics, track trace, telematics, service management, billing services).
- API access based on customer subscription in an automated way.
- Data monetization, network analysis, and 24x5 access with the availability of API's and event dashboards.



- The fleet customers will send login using single sign on and login will get validated at subscription management to buy subscription.
- The subscription details will be available to fleet customers using the product catalog to select the subscription.
- The subscription cost needs to be paid by the customer and this request will flow to the billing system for the payment.
- Invoicing will get generated from billing system and payment will be done by customer using payment option from billing system.
- Post successful payment, customer account will be updated/created for the subscription details in subscription management and store the package information into the database using rest API.
- Trip information, diagnostic and service management data will be enabled at telematic system to collect the data for the fleet customer for their vehicle.
- Fleet customers will be able to view the data on the portal.



- The remote diagnostic data will be collected on amazon SQS from vehicle.
- Lambda orchestration will retrieve the data from SQS and will store the data in S3.
- Event bridge rule will be executed to retrieve the data from even bridge and fetch the customer mapping data from customer system stored in RDS to enrich the event.
- The enrich event data will be stored into AWS dynamo DB and will be sent to corresponding fleet customer SQS.
- The fleet customer will retrieve the diagnostic and service management data using rest API via AWS API gateway from corresponding SQS.

Business and Community Impact

Enabling data API access to fleet customers will help them to build value add services such as fleet management dashboards with real-time data to monitor the health of their trucks and manage vehicle maintenance and repairs with minimum downtime.

- API availability - 99.99% availability of the APIs for the end customers.
- VIN/customer data accuracy - 100% data accuracy with automated VIN- customer information synchronization in real time.
- Monitoring of API's performance using advanced cloud technologies with API's usage, invocation, event writing capacity.

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